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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/591,516

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Hirokazu Arai

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EXAMINER

LACLAIR, DARCY D

ART UNIT

PAPER NUMBER

1763

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DELIVERY MODE

07/25/2011

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/591,516	Applicant(s) ARAI ET AL.	
	Examiner DARCY D. LACLAIR	Art Unit 1763	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 May 2011.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. All outstanding rejections, except for those maintained below are withdrawn in light of the amendment filed on **5/12/2011**.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Upon reconsideration of the claims and an updated search, new grounds of rejection are set forth below which were are not necessitated by applicant's amendment. Thus, *a 2nd non-final Office action is set forth as follows.*

Double Patenting

2. **Claims 1-5** are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over **claims 1-8 of U.S. Patent No. 6,716,907** in view of **Togashi et al. (US 5,064,881)** and **Amagai et al. (US 20030130438)**. Although the conflicting claims are not identical, they are not patentably distinct from each other because both require a resol based phenolic molding composition.

With regard to Claims 1 and 3, the conflicting patent requires a resol based phenolic resin composition comprising, per 100 parts of resin by weight, 40 to 100 parts by weight of inorganic fiber, 20 to 90 parts of a natural silica, and 1 to 15 parts of a rubber component. (Claim 1) Further, the conflicting patent requires that the natural silica powder is shaped like pulverized power. (Claim 3) The conflicting patent does

Art Unit: 1763

not explicitly teach the use of a silica having a particle size of 0.5 to 15 microns.

Togashi teaches an epoxy resin containing a phenol type resin, having a specific pulverized silica particle which has reduced mold shrinkage and improved precision in molding. (Abstract) The silica used to reduce mold shrinkage and improve molding is a specific pulverized silica (see col 2 line 20) having an average particle size up to 8 microns, and a maximum particle size up to 60 microns, (see col 2 line 50-51) and a specific pulverized silica having a maximum particle size of 10 microns, and an average particle size of 1.8 microns is exemplified. (See col 9 line 51-52) This silica allows high filling while simultaneously maintaining flowability. (See col 4 line 32-50) Furthermore, surface roughness of the molded objects is reduced, along with reduced mold shrinkage. (See col 7 line 54-60) This silica is used in a composition further including a glass fiber. (See col 2 line 40) The conflicting patent teaches a silane coupling agent in order to improve the adhesion of the glass fiber filler to the phenolic resin, (see col 2 line 57) and Togashi teaches that a coupling agent such as γ -glycidoxypropyltrimethoxysilane can be added to the composition (see col 9 line 23-24) but neither explicitly teaches treating the silica powder with this agent. Amagai teaches that silicas such as natural silica and glass (see par [0110]) can be used in a phenol resin composition (see par [0086]) and that these benefit from surface treatment with a coupling agent such as γ -glycidoxypropyltrimethoxysilane and the like to improve conformability. (See par [0141]) It would be obvious to one of ordinary skill in the art to use the coupling agents taught by both the conflicting patent and Togashi in the manner described by Amagai in order to improve the adhesion of the silica filler to the phenol

Art Unit: 1763

resin. Based on the similarities in the compositions, both including a phenol resin and glass fibers, it would be obvious to one of ordinary skill in the art to use a coupling agent treated small pulverized silica having a reduced particle size as a replacement for the conflicting patent's slightly larger silica in order to obtain good flowability and therefore good mold filling and reduced molding flaws, a reduced surface roughness, and a reduced mold shrinkage, which further results in reduced warping or misshaping of the molded article due to the shrinkage, as similar benefits would be expected.

With respect to Claim 2, attention is first directed at the discussion of Claim 1, above. The conflicting patent further requires that the inorganic fiber includes 50% or more by weight of glass fiber. (Claim 2)

With respect to Claim 4, attention is directed at the discussion of Claims 1-3, above.

With respect to Claim 5, the conflicting patent requires that the resin is prepared in the form of a resin pulley molded from the composition. (Claim 5-8)

Claim Rejections - 35 USC § 103

3. **Claims 1-5** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Asai et al. (US 2002/0123557)** in view of **Togashi et al. (US 5,064,881)** and **Amagai et al. (US 20030130438)**. .

With regard to Claims 1 and 3, Asai teaches a resol based phenolic resin composition containing, per 100 parts of resin by weight, 40 to 100 parts by weight of inorganic fiber, 20 to 90 parts of a natural silica, and 1 to 15 parts of a rubber

Art Unit: 1763

component. The natural silica powder is preferably shaped like pulverized power. (See abstract).

Asai does not explicitly teach the use of a silica having a particle size of 0.5 to 15 microns.

Togashi teaches an epoxy resin containing a phenol type resin, having a specific pulverized silica particle which has reduced mold shrinkage and improved precision in molding. (Abstract) The silica used to reduce mold shrinkage and improve molding is a specific pulverized silica (see col 2 line 20) having an average particle size up to 8 microns, and a maximum particle size up to 60 microns, (see col 2 line 50-51) and a specific pulverized silica having a maximum particle size of 10 microns, and an average particle size of 1.8 microns is exemplified. (See col 9 line 51-52) This silica allows high filling while simultaneously maintaining flowability. (See col 4 line 32-50) Furthermore, surface roughness of the molded objects is reduced, along with reduced mold shrinkage. (See col 7 line 54-60) This silica is used in a composition further including a glass fiber. (See col 2 line 40) The conflicting patent teaches a silane coupling agent in order to improve the adhesion of the glass fiber filler to the phenolic resin, (see col 2 line 57) and Togashi teaches that a coupling agent such as γ -glycidoxypentyltrimethoxysilane can be added to the composition (see col 9 line 23-24) but neither explicitly teaches treating the silica powder with this agent. Amagai teaches that silicas such as natural silica and glass (see par [0110]) can be used in a phenol resin composition (see par [0086]) and that these benefit from surface treatment with a coupling agent such as γ -glycidoxypentyltrimethoxysilane and the like to improve

Art Unit: 1763

conformability. (See par [0141]) It would be obvious to one of ordinary skill in the art to use the coupling agents taught by both the conflicting patent and Togashi in the manner described by Amagai in order to improve the adhesion of the silica filler to the phenol resin. Based on the similarities in the compositions, both including a phenol resin and glass fibers, it would be obvious to one of ordinary skill in the art to use a coupling agent treated small pulverized silica having a reduced particle size as a replacement for the conflicting patent's slightly larger silica in order to obtain good flowability and therefore good mold filling and reduced molding flaws, a reduced surface roughness, and a reduced mold shrinkage, which further results in reduced warping or misshaping of the molded article due to the shrinkage, as similar benefits would be expected.

With respect to Claim 2, attention is first directed at the discussion of Claim 1, above. Asai teaches that it is preferred that the inorganic fiber includes 50% or more by weight of glass fiber. (See abstract)

With respect to Claim 4, attention is directed at the discussion of Claims 1-3, above.

With respect to Claim 5, Asai teaches that the resin is prepared in the form of a resin pulley molded from the composition. (See abstract)

Response to Arguments

4. Applicant's arguments filed **5/12/2011** have been fully considered. Specifically, applicant argues

(A) The obviousness type double patenting rejection and the 103 rejection set forth in the office action neither teach nor suggest a natural silica powder which has been *subjected to a coupling agent treatment*. This treatment provides improved adhesion of the silica powder to the phenol resin and prevents loss of silica powder due to frictional resistance.

5. **With respect to argument (A)**, applicant's arguments have been considered, but are moot in view of the rejection set forth above.

Conclusion

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Darcy D. LaClair whose telephone number is (571)270-5462. The examiner can normally be reached on Monday-Friday 8:30-6.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Milton Cano can be reached on 571-272-1398. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1763

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/MILTON I CANO/
Supervisory Patent Examiner, Art Unit 1763

Darcy D. LaClair
Examiner
Art Unit 1763

/DDL/